

THAT WHICH IS CLAIMED:

1. An automated packaging apparatus for depositing a predetermined number of pills into a series of containers, comprising:

5 a plurality of rotary slats, wherein each of said plurality of rotary slats is independently rotatable and comprises an outer peripheral edge portion, said rotary slats are configured such that said outer peripheral edge portions together define a common interior space, each of said outer peripheral edge portions defining a plurality of pill apertures extending therethrough, and each of said pill
10 apertures is configured to receive one of the pills from said common interior space at a first position and transmit the pill outside said rotary slats at a second position;

a conveyor configured to move a plurality of open containers along a predetermined path of travel and position each of said containers adjacent a
15 respective rotary slat to define a delivery path extending between the second position of said rotary slat and said container;

at least one drive motor in driving engagement with said rotary slats for rotating said rotary slats; and

a controller connected to said at least one drive motor for controlling said
20 at least one drive motor such that said rotary slats can be independently rotated for different durations.

2. The automated packaging apparatus of Claim 1 further comprising a shroud extending from a location proximate to said first position to a location
25 proximate to said second position such that said shroud prevents the pills from exiting said rotary slats through said pill apertures prior to the pills reaching said second position.

3. The automated packaging apparatus of Claim 1 further comprising
30 an air blower located in said common interior space and configured to emit air towards said pill apertures at said second position.

5 4. The automated packaging apparatus of Claim 1 further comprising
a plurality of plows, each plow extending toward said pill apertures at the second
position of said rotary slats such that said plows urge said pills from said pill
apertures.

10 5. The automated packaging apparatus of Claim 1 further comprising
an air blower located outside said plurality of rotary slats and configured to emit
air towards said pill apertures at a third position of said rotary slats such that pills
positioned within said pill apertures at said third position are urged into said
common interior space.

15 6. The automated packaging apparatus of Claim 1 wherein each of
said plurality of rotary slats defines an inner contour sloped toward said pill
apertures to facilitate the entry of pills into said pill apertures.

20 7. The automated packaging apparatus of Claim 1 wherein said pill
apertures are slanted downward toward the outside of said rotary slats when
positioned at the second position such that said pills tend to fall from said pill
apertures and out of said rotary slats at the second position.

25 8. The automated packaging apparatus of Claim 1 wherein said inner
surface of each of said plurality of rotary slats defines an inner contour that varies
around the circumference of the rotary slat to facilitate the entry of pills into said
pill apertures.

 9. The automated packaging apparatus of Claim 1 wherein said rotary
slats are supported by a plurality of cradle rollers.

10. The automated packaging apparatus of Claim 1 further comprising a drive assembly engaged to said rotary slats for independently rotating each of said rotary slats.

5 11. The automated packaging apparatus of Claim 10 wherein said drive assembly includes a plurality of drive wheels, each said drive wheel contoured to match said outer peripheral edge portion of said rotary slats.

10 12. The automated packaging apparatus of Claim 1 wherein said rotary slats are positioned with gaps of between about 0.5 to 1 millimeter between adjacent rotary slats.

15 13. The automated packaging apparatus of Claim 1 wherein said rotary slats are formed of a compound comprising acrylonitrile-butadiene-styrene and polytetrafluoroethylene.

20 14. The automated packaging apparatus of Claim 1 further comprising a reservoir configured to hold the pills and feed the pills into said common interior space defined by said rotary slats.

25 15. The automated packaging apparatus of Claim 12 further comprising a reservoir gate configured to control the passage of pills from said reservoir to said common interior space.

16. The automated packaging apparatus of Claim 1 further comprising a sensor configured to detect the quantity of the pills in said common interior space of said rotary slats.

17. The automated packaging apparatus of Claim 1 further comprising a plurality of chutes, each of said chutes defining said delivery path extending from said second position of one of said rotary slats to the corresponding container.

18. The automated packaging apparatus of Claim 1 further comprising a delivery sensor that detects the delivery of a pill through said delivery path.

19. The automated packaging apparatus of Claim 1 wherein said controller is configured to alternately accelerate and decelerate said rotary slats such that said rotatory slats are vibrated and the pills are agitated.

20. An method of depositing a predetermined number of pills into a series of containers, comprising:

disposing a plurality of pills in a common interior space of a drum, the drum comprising a plurality of rotary slats;

capturing a plurality of the pills in individual pill apertures defined by an outer peripheral edge portion of the plurality of rotary slats;

independently rotating the rotary slats to a position where the pills are released from the pill apertures thereby delivering the pills to a plurality of containers;

counting each pill as the pills are delivered to the containers;

positively determining the number of pills deposited into each of the containers; and

stopping the rotation of the rotary slats for which the respective containers have received a predetermined number of pills while continuing the rotation of any slats for which the respective container has not received the predetermined number of pills.

21. The method of Claim 20 further comprising directing air toward the pill apertures in a direction from the common interior space of the rotary slats toward the outside of the rotary slats to facilitate the release of the pills from the pill apertures.

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22. The method of Claim 20 further comprising contacting the pills with a plow to urge the pills from the rotary slats.

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23. The method of Claim 20 further comprising directing air toward the pill apertures in a direction from the outside of the rotary slats to urge pills in the pill apertures toward the common interior space.

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24. The method of Claim 20 further comprising detecting the quantity of the pills in the common interior space and automatically feeding more pills into the common interior space to maintain a predetermined quantity pills in the common interior space.

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25. The method of Claim 20 wherein said rotating step comprises alternately accelerating and decelerating the rotary slats to agitate the pills.

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26. The method of Claim 20 further comprising during said rotating step preventing the release of each of the pills from the pill apertures before each of the pills reaches a predetermined release position with a shroud that partially surrounds the rotary slats.

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27. The method of Claim 20 further comprising supporting the rotary slats with at least two cradle rollers.

28. The method of Claim 20 further wherein said rotating step comprises independently driving each of the rotary slats with at least one drive device.

29. The method of Claim 20 wherein said delivering step comprises dropping the pills through chutes, the chutes guiding the pills toward the containers.